2020
B.C.A.
[HONOURS]
(Microprocessor and System Software)
Paper : BCA-205

Full Marks : 80 Time : 4 Hours

The figures in the right-hand margin indicate marks.
Candidates are required to give their answers in their own words as far as practicable.

Answer **Q. No.1** and any **four** from the rest.

1. Answer any **eight** questions: 2×8=16

   a) Give one example of register indirect addressing mode.

   b) When auxiliary carry flag in set?

   c) What is non maskable interrupt?

   d) Explain the function of ALE and IO/M signals of 8085 microprocessor.

   e) Write the name of addressing modes of following instructions:

      MOV A, M XCHG.

   f) What is Program Status Word?

   g) If the clock frequency is 5MHz, how much time is required to execute LDA 2400H?

   h) What is assembler?

   i) Write the function of SID and SOD pin of 8085 μp .

   j) Differentiate between ADD and ADI instruction.

   k) Define macro.

   l) What is the advantages of compiler and go loader scheme?

2. a) Discuss functions of different control, status and special signals of 8085 microprocessor.

   b) Explain the timing diagram of STA 2050H.

   c) What do you mean by MPU? 6+8+2=16

3. a) If the 8085 μp Add 56H with 32H, specify the content of A, S, Z and CY with proper explanation.

   b) Write the purpose of CMP instruction.

   c) Draw the 8085 hardware model.

   d) Write a ALP to find out the smallest value stored in two consecutive memory location. 4+1+3+8=16

4. a) Write an assembly language program to count number of 0's present in 8-bit number.

   b) Write the use of the following instruction: 'LXI', 'LDA', 'STA', 'DAA', 'LDAX'.

   c) During DMA transfer how DMA controller communicates with 8085 microprocessor? 6+5+5=16

5. a) Draw a schematic diagram of memory interfacing of 8085.

   b) Write the importance of RIM and SIM instruction.

   c) Explain the complete bit pattern which is loaded into the accumulator when the 8085 µp executes the RIM instructions.

   d) How does 8085 µp differentiate between data and instruction code?

   e) Define non-maskable interrupt. 6+3+3+2+2=16

6. a) Draw the pin diagram of 8086 µp in a minimum mode of operation.

   b) What is MACRO? What are the basic task of macro instruction processor?

   c) Briefly describe the various segment register available in 8086 µp. 7+(2+3)+4=16

7. Write short notes on any **four**: 4×4=16

   a) 8085 Vs. 8086

   b) Different phases of compiler

   c) Status register of 8086 µp

   d) Addressing mode of 8086 µp

   e) Operation of RLC and RRC

   f) 8255A

   g) Instruction set of 8085 µp

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